# STOCKPILE REPORT
## to the Congress

July - December 1954

Pursuant to Section 4
of the
Strategic and Critical Materials
Stock Piling Act
Public Law 520, 79th Congress

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF DEFENSE MOBILIZATION
WASHINGTON 25, D. C.

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OFFICE OF THE DIRECTOR

March, 1955

The Honorable
The President of the Senate

The Honorable
The Speaker of the House of Representatives

Sirs:

There is presented herewith the semi-annual Report to the Congress on the Stockpiling Program in accordance with Section 4 of the Strategic and Critical Materials Stock Piling Act, Public Law 520, 79th Congress. This report covers the period from July 1 to December 31, 1954.

Sincerely yours,

Arthur S. Flemming
Director

# FOREWORD

The National Stockpile program may eventually involve the acquisition of materials having a total value of about 10 billion dollars. The willingness of this Nation to invest so heavily in materials security is deeply rooted in the knowledge, gained in two world wars, of the painful and dangerous consequences of depending in wartime upon normal peacetime supplies of raw materials from overseas sources. In both world wars, and particularly World War II, the inability of this country to obtain material supplies delayed war production and military operations, forced costly uses of other resources, and fostered wasteful competition for scarce supplies.

Since passage of the present Stock Piling Act in 1946 and the Defense Production Act in 1950, the United States has gained substantially in materials security. The capacity of the Free World to produce strategic materials has been greatly expanded and a large strategic reserve of 75 materials has been accumulated. This reserve, which is currently valued at about 5 billion dollars, is being increased at the rate of about 800 million dollars per year. For most of the strategic materials that might be in short supply during an all-out conflict, the United States has now achieved a reasonably secure defense position that can be maintained indefinitely.

This fifteenth semi-annual Stockpile Report to the Congress (the third prepared by the Office of Defense Mobilization) consists of two parts. Part I presents a brief review of the authorities, policies, and procedures under which the stockpile program is administered. Part II describes the present status of the stockpile program, other related activities, and the significant developments in specific materials during the reporting period. An appendix contains a financial summary and other information relating to the nature and management of the stockpile program.

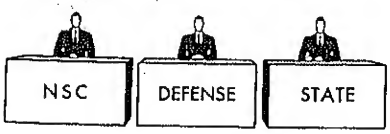
The Office of Defense Mobilization gratefully acknowledges the assistance given by many other agencies of the Federal Government in preparing this report.

# CONTENTS

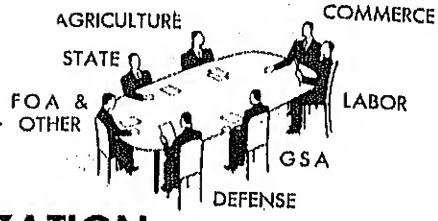
# STOCKPILING

**$9,600,000,000**

STRATEGIC FACTORS




SUPPLY-DEMAND DATA PROGRAM




## OFFICE OF DEFENSE MOBILIZATION

1. Establishes Defense Materials Policies and Programs
2. Determines Stockpile Materials
3. Sets Stockpile Objectives
4. Determines Purchase Programs

# OPERATIONS

## GENERAL SERVICES ADMINISTRATION

**EMERGENCY PROCUREMENT SERVICE**

BUYS OR ACQUIRES AND STORES STOCKPILE MATERIALS FROM:

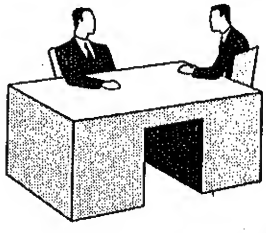
**GOVERNMENT SOURCES**

SUCH AS:

DEFENSE PRODUCTION ACT INVENTORIES

GOVERNMENT OWNED SURPLUSES

COMMODITY CREDIT CORPORATION
BARTER FOR AGRICULTURAL SURPLUSES



**U. S. PRODUCERS AND IMPORTERS**



# INVENTORIES

**OBJECTIVES** $9.6 Billion, including $6.5 Billion minimum

$5,000,000,000

**ON HAND**

21,500,000 TONS

12/31/54

# I. REVIEW OF STOCKPILE POLICIES AND OPERATIONS

Stockpiling is only one of several activities contributing to the Nation's security in raw materials. In this brief review of stockpile policies and operations the general nature of the total defense materials task is outlined and the principal legislative authorizations are summarized. This is followed by a more detailed description of stockpile management and operations.

## THE DEFENSE MATERIALS TASK

In broad outline the defense materials task is to provide the degree of preparedness in raw materials that is needed to support strategic plans and objectives in the "cold war" period and to successfully wage limited or full-scale war if either becomes necessary. To accomplish this task it is necessary to determine the kinds and quantities of materials that may be needed, to compare these requirements with the supplies that are likely to be available, and to develop programs for increasing supplies where deficiencies are found to exist. The entire undertaking must be reviewed frequently in order to maintain security in a material, once it has been achieved, and to adjust the program for each material to strategic, economic, and technological changes.

This entire defense materials program has been under way for the past several years. Its magnitude can be judged from the fact that it may eventually cost in excess of 10 billion dollars. The responsibility for over-all management of this task is assigned to the Office of Defense Mobilization. In carrying out this responsibility, the basic policy objective of the Office of Defense Mobilization is to provide the required security when needed and at the least cost to the Government.

## LEGISLATIVE AUTHORITY FOR THE DEFENSE MATERIALS PROGRAM

The Congress has authorized a considerable number of activities to develop and maintain defense materials security. These are contained principally in four legislative enactments: The Internal Revenue Code of 1954, the Defense Production Act of 1950, the Strategic and Critical Materials Stock Piling Act (1946), and the Agricultural Trade Development and Assistance Act of 1954.

Section 168 of the Internal Revenue Code of 1954 continues the authority to grant rapid tax amortization to expand the Nation's capacity to produce materials. For many materials this has been the only incentive required to provide for defense needs. For others, it has lessened the need for more costly incentives.

The Defense Production Act of 1950 authorizes loans, loan guarantees, purchases and purchase commitments to expand productive capacities, to increase the production of materials for Government use or resale, and to encourage exploration, development, and mining. These authorities have been used extensively to relieve industrial material shortages and to provide materials for the stockpile. At the present time, gross commitments for material programs under the Defense Production Act amount to about 6.3 billion dollars. According to present estimates, these commitments may ultimately cost the Government

about 750 million dollars, exclusive of the cost of materials transferred to the stockpile.

The Strategic and Critical Materials Stock Piling Act provides for stockpiling strategic and critical materials and conserving and developing these materials in the United States in order to "decrease and prevent wherever possible a dangerous and costly dependence of the United States upon foreign nations for supplies of these materials in time of national emergency." To accomplish this objective the Act requires (1) determination of the materials to be stockpiled, (2) establishment of objectives and purchase programs, and (3) protection and maintenance of stockpiled materials through appropriate storage, processing, and rotation programs. The Act also provides for withdrawing materials from the stockpile and disposing of excess or obsolete inventories. Disposal may be made only in accordance with specific provisions designed to assure the availability of stockpiled materials in time of emergency and to prevent disruption of normal markets.

The Agricultural Trade Development and Assistance Act of 1954 establishes a supplemental stockpile and authorizes the purchase of strategic materials for this stockpile with foreign currencies acquired from the sale of surplus agricultural commodities. The Act also expands somewhat the authority of the Commodity Credit Corporation to barter commodities for strategic materials.

## ORGANIZATION OF THE STOCKPILE PROGRAM

Until June 12, 1953, primary responsibility for management of the stockpile program was vested jointly in the Munitions Board of the Department of Defense and in the Department of the Interior. Under Reorganization Plan No. 3 this activity was transferred to the Office of Defense Mobilization. The principal purpose of this part of the Plan was to center ultimate responsibility for all phases of materials security in a single agency.

The National Security Council establishes the basic framework of policies and assumptions for both the military and non-military aspects of the national security program. Under this guidance the Office of Defense Mobilization establishes policies and procedures for the stockpile program, determines the kinds and quantities of materials to be stockpiled, prepares purchase plans and directives, develops area storage plans, and recommends withdrawal actions to the President. The Emergency Procurement Service of the General Services Administration is responsible for stockpile operations. In this capacity, the Emergency Procurement Service purchases and stores materials and rotates or otherwise maintains the quality of the stockpile in order that it may be fully and immediately available should an emergency arise.

In performing these functions the Office of Defense Mobilization utilizes to the maximum extent possible the skills, knowledge, and services of other Government agencies. Thus the Department of the Interior has been delegated responsibilities for recommending mobilization plans and programs for metals and minerals. The Department of Agriculture acts in a similar capacity for agricultural materials and the Department of Commerce for many other materials. The Department of Defense provides strategic military guidance and estimates of military requirements, and the Department of State provides other strategic advice. The Department of Commerce estimates the requirements for war-supporting and essential wartime civilian consumption. In addition, many private organizations and commercial firms are consulted frequently regarding the forms and qualities of materials that should be stockpiled in order to meet the probable demands of a wartime economy.

A summary of the defense materials activities of the various departments and agencies is shown in Appendix D. The interdepartmental committees that are utilized by the Office of Defense Mobilization to obtain advice on the

stockpile program are outlined in Appendix E.

## STOCKPILE MANAGEMENT AND OPERATIONS

In fulfillment of its responsibilities under the Stock Piling Act the Office of Defense Mobilization seeks to integrate stockpiling with all other defense materials programs and to manage the stockpile program in such a manner that stockpile purchasing will make positive contribution to the Nation's ability to mobilize. The policies and procedures described below indicate briefly the manner in which these basic objectives are being achieved.

### SELECTION OF MATERIALS TO BE STOCKPILED

The Commodity Divisions of the Office of Defense Mobilization maintain surveillance over approximately 200 raw materials that are essential in time of war. At the present time the stockpile consists of 75 of these materials plus 18 additional items that have been acquired largely by transfer from Government surpluses and are not currently under active procurement. Atomic energy materials are under the jurisdiction of the Atomic Energy Commission and are not provided for in the National Stockpile.

The selection of a material for the stockpile is based mainly upon clear evidence that it is essential to wartime production and would otherwise be in short supply during an all-out conflict. In addition, it must be demonstrated that stockpiling represents the most practical and efficient means of meeting the indicated wartime security deficit.

In determining the forms and grades of materials to be stockpiled the basic rule is to stockpile at the stages of processing where the wartime deficits are likely to occur. Consistent with this, the principles of maintaining maximum flexibility of wartime use, minimum loss from obsolescence, and lowest storage costs are also followed. Thus a number of the metals and minerals in the stockpile, such as manganese, chromium, and tungsten, are stockpiled primarily in the form of ore or concentrates. Others, such as copper, aluminum, and nickel, are stockpiled in pig, ingot, or similar metallic forms. To provide security in some metals and minerals it is necessary to stockpile them in several different metallic and non-metallic forms. Most of the non-metals and minerals are stockpiled in forms that permit speedy utilization in their respective wartime uses.

### ESTABLISHMENT OF OBJECTIVES AND PROCUREMENT

#### *THE MINIMUM PROGRAM*

A minimum objective is established for each stockpile material. These objectives represent the quantities that must be acquired and stored in order to provide for the estimated deficits between essential wartime military and civilian requirements, and wartime supplies from domestic and foreign production. Minimum objectives are developed in conformance with guidance and assumptions established by the National Security Council and are based primarily on detailed "balance-sheet" types of analyses of probable wartime requirements and supplies.

The direct military requirements used in these calculations are computed by the military establishments from planned production schedules for military equipment and supplies. War-supporting and essential civilian requirements are estimated by the civilian agencies, chiefly the Departments of Commerce and Agriculture, in accordance with planning guides and criteria prepared by the Office of Defense Mobilization. These estimates may be adjusted to allow for economical wartime substitutes, conservation, and technological change in material usage.

The supply estimates are based on expected wartime domestic production and imports, and are adjusted for ex-

pected expansion projects, depletion of deposits, and possible losses or interruptions of foreign production or shipments. The effect of possible foreign losses or interruptions is provided for by applying strategic discount factors developed by the Joint Chiefs of Staff and the Department of State.

Much of the work of assembling and analyzing the basic data used in calculating minimum stockpile objectives is performed by seven interdepartmental commodity committees. Proposed objectives are reviewed with the Interdepartmental Materials Advisory Committee and, if major policy issues arise, they may be referred to the Defense Mobilization Board or possibly the National Security Council. Final objectives are then established by the Office of Defense Mobilization. The procedure is essentially the same when a new material is added to the stockpile list or an existing objective is reviewed.

Achievement of the minimum stockpile program is essential to materials security. It is therefore the policy of the Office of Defense Mobilization that minimum objectives shall be completed as quickly as possible and at the lowest possible cost, without interfering with defense production and without creating undue hardship within the civilian economy. Stockpile procurement is also expected to make maximum contribution to domestic sources of supply and at the same time keep the United States in a position to turn to foreign sources where complete reliance on domestic supply is not possible.

*THE LONG-TERM PROGRAM*

The long-term stockpile policy was established by the President on March 26, 1954, upon recommendation of the President's Cabinet Committee on Minerals Policy. This policy provides for security in materials additional to the minimum program through substantially higher objectives for stockpiled metals and minerals. The policy also authorizes the processing of stockpile inventories to forms that will be more readily usable in time of war.

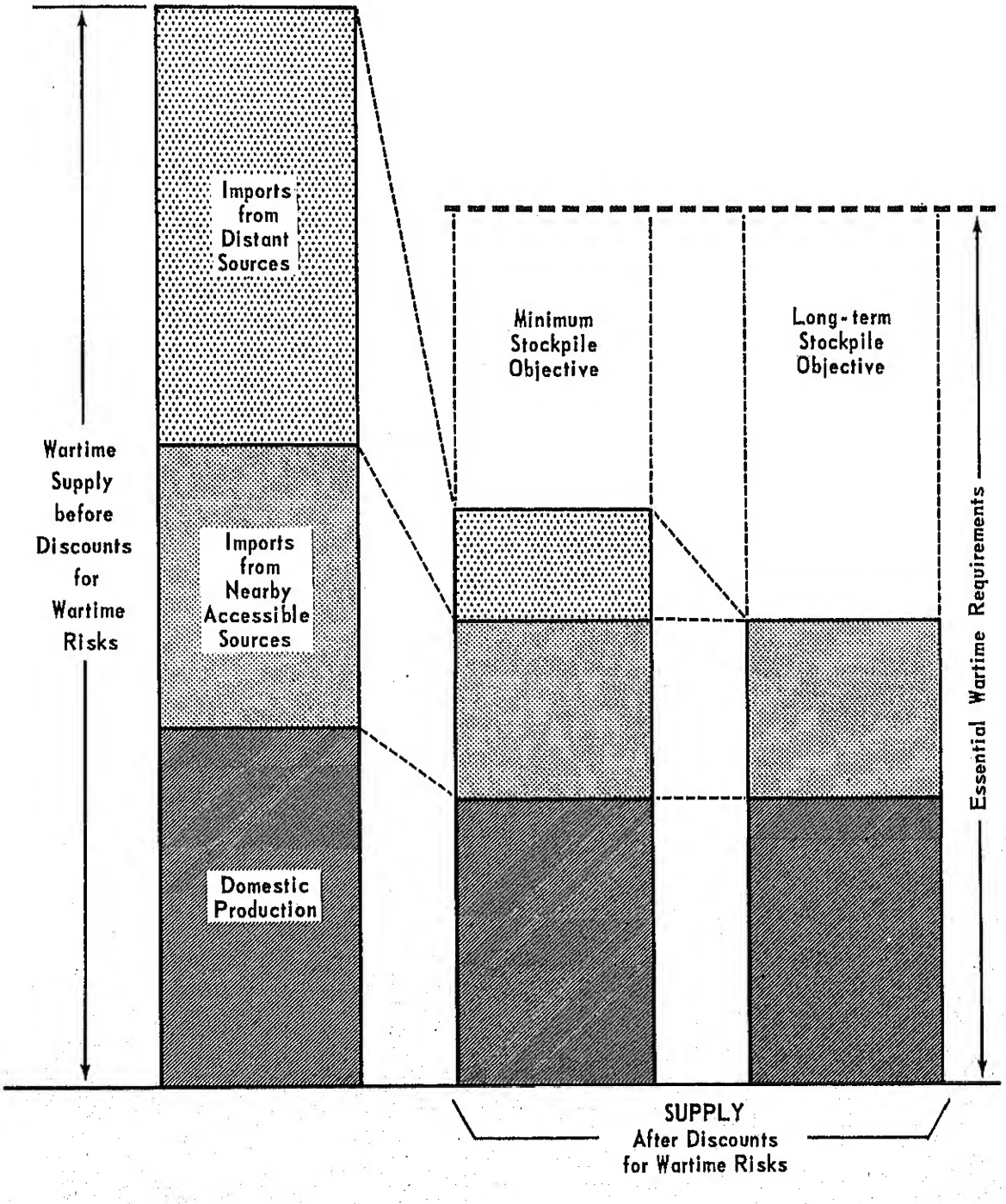
The long-term objectives are computed primarily by discounting further the wartime import estimates that are used in calculating minimum objectives. Under the long-term concept it is assumed that in the event of war, supplies will not be available from foreign sources other than a limited group of countries to which access can be had with the same degree of reliance as afforded by sources within the United States. Less stringent assumptions may also be made with respect to wartime conservation of strategic metals and minerals. Chart I compares the general effect of the different supply assumptions used in computing minimum and long-term objectives.

When the minimum objective for a material has been reached, it is not necessary to complete the long-term objective as quickly. Consequently, it is expected that the acquisition of materials under the long-term policy will occur over a considerable period of time.

Open-market procurement toward the higher objectives and up grading actions must be made at prices advantageous to the Government and under conditions that will assist in maintaining some essential component of materials preparedness. When open-market purchases are made under the long-term policy, preference is given to newly-mined domestic metals and minerals. The policy provides for crediting to the stockpile materials acquired under the Stock Piling Act beyond minimum objectives, and for transferring to the stockpile surplus materials acquired under the Defense Production Act and other Government programs. The exchange of agricultural commodities for strategic metals and minerals may also be used to complete the long-term objectives.

## Chart I

## COMPARISON OF SUPPLY FACTORS IN DETERMINING MINIMUM AND LONG-TERM STOCKPILE OBJECTIVES



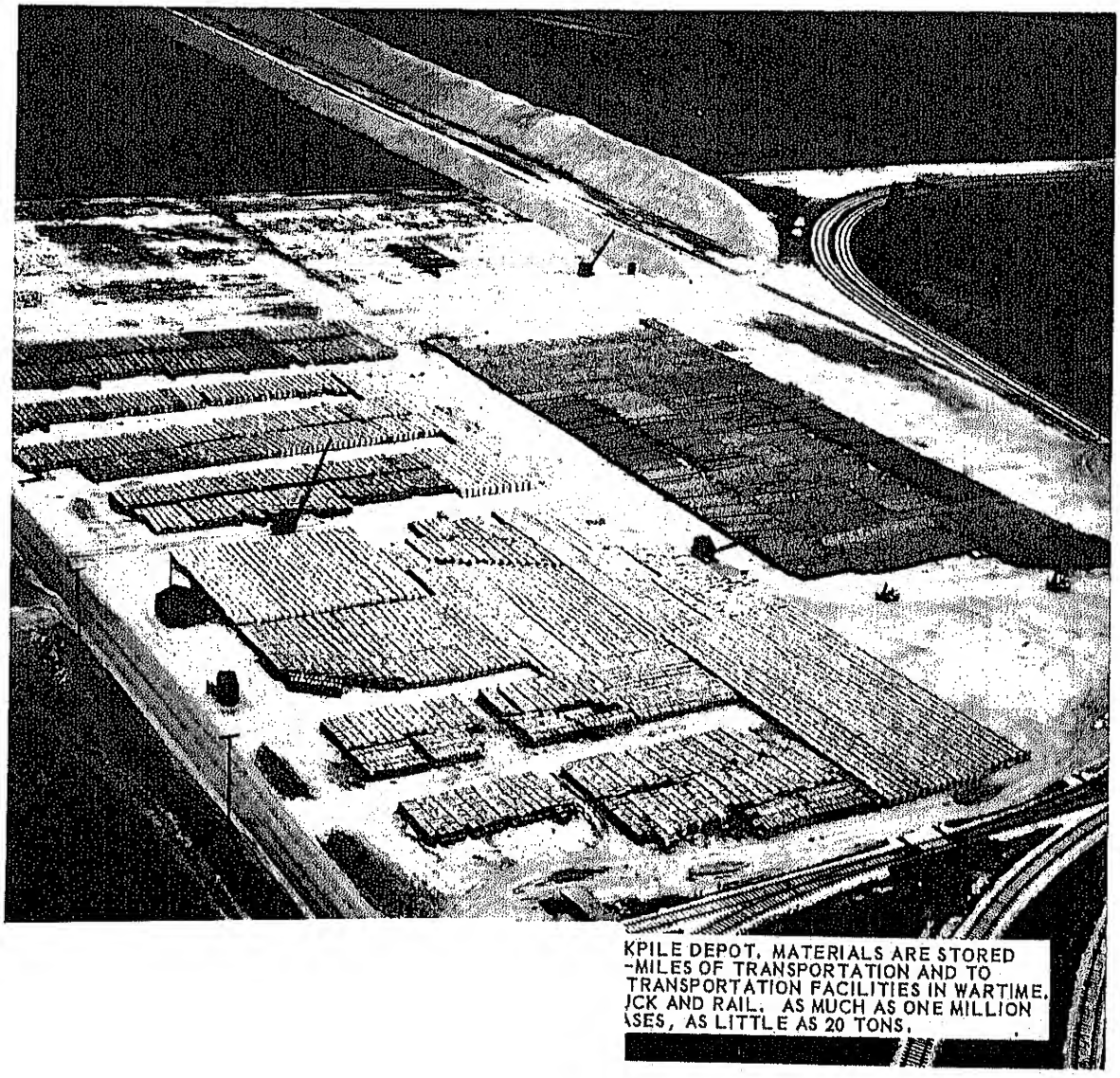
*THE SUPPLEMENTAL STOCKPILE*

Title I of the Agricultural Trade Development and Assistance Act (July 1954) establishes a supplemental stockpile which is additional to the minimum and long-term programs and is third in strategic importance. Materials may be purchased for this stockpile with foreign currencies acquired by the United States through the sale of surplus agricultural commodities. The Office of Defense Mobilization determines the kinds and quantities of strategic materials that may be acquired in this fashion.

## STORAGE, ROTATION, AND PROCESSING

*STORAGE*

The size, nature, and purposes of the stockpile have required special policies, procedures, and techniques for storing strategic materials. In establishing policies and criteria for the storage of stockpile materials, it is the objective of the Office of Defense Mobilization to make certain that such materials will be secure and will be promptly available to essential consuming industries in time of war. Accordingly, all materials acquired for the National Stock-



KPILE DEPOT. MATERIALS ARE STORED
-MILES OF TRANSPORTATION AND TO
TRANSPORTATION FACILITIES IN WARTIME.
JCK AND RAIL. AS MUCH AS ONE MILLION
SES, AS LITTLE AS 20 TONS.

pile must be stored and maintained so as to provide adequate protection against the risk of loss from possible enemy action and from non-military destructive elements such as contamination, deterioration, theft, sabotage, fire, and climate.

Consistent with the foregoing, stockpile materials are stored as close as possible to wartime consuming facilities in order to insure continuity of wartime production and to minimize the burden of transportation in time of war and the risk of disrupted transportation facilities. These objectives are accomplished at the lowest possible cost.

Under these basic policies the Emergency Procurement Service selects storage facilities and provides for the transportation, inspection, maintenance, and security of stockpiled materials.

In selecting storage sites, preference is given to suitably constructed and located Government-owned facilities. Many of the non-perishable materials are stored in plant areas.

*ROTATION*

Certain of the materials in the stockpile, such as the vegetable oils, cordage fibers, and rubber, deteriorate with age and must be replaced periodically with fresh stocks. It is Government policy to rotate these perishables before deterioration has taken place. Some cost is incurred, however, primarily because of the added transportation and handling. Rotation programs are planned and operated by the Emergency Procurement Service after consultation with the affected industries. Rotation transactions usually consist of simultaneous sales and purchases and thus generally have little market impact. Rotation operations are always conducted so as not to interfere unduly with the operation of normal markets.

*PROCESSING*

To maintain the quality of the stockpile and to up grade materials to more stable forms as needed, the Emergency Procurement Service arranges for processing or refining stockpiled materials as directed by the Office of Defense Mobilization. The need for such processing or refining is determined by regular and frequent inspection of the stored materials. Up grading programs are determined generally as the result of periodic examination of wartime requirements during the review of stockpile objectives.

WITHDRAWALS AND DISPOSAL

The Stock Piling Act makes clear that the stockpile is intended as a reserve to be used only under emergency conditions. Thus, except for purposes of rotation or disposal, the Act provides that materials may be withdrawn from the stockpile "only (a) on order of the President at any time when in his judgment such release is required for purposes of the common defense, or (b) in time of war or during a national emergency with respect to common defense proclaimed by the President, on order of such agency as may be designated by the President."

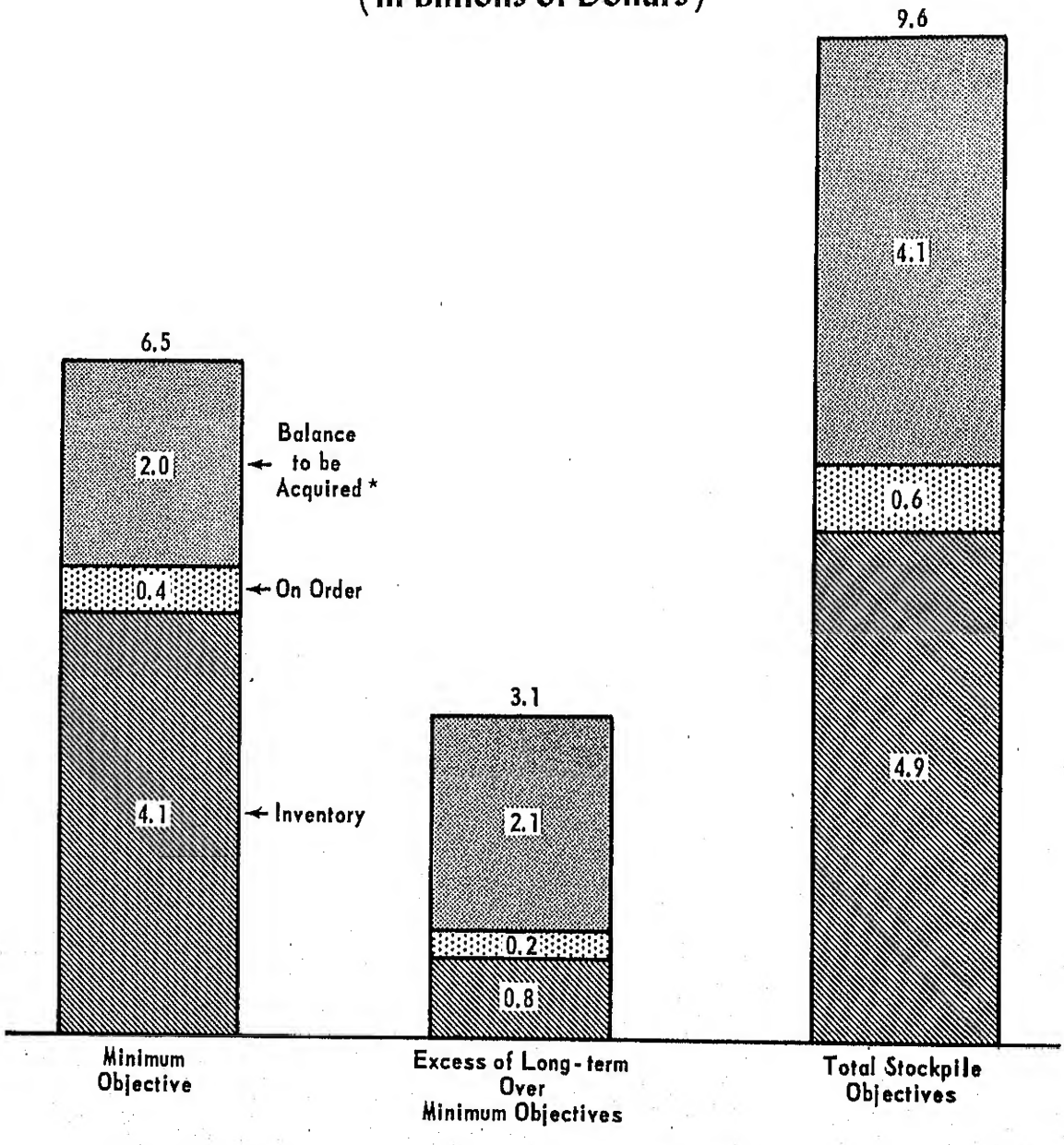
Under the Act a stockpiled material may be disposed of if revision of the objective shows that the quantity in inventory is wholly or in part surplus to the needs of the stockpile. No disposition of such materials may be made "until six months after publication in the Federal Register and transmission of a notice of the proposed disposition to the Congress and to the Military Affairs Committee of each House thereof." Disposal notices state the kind and quantity of materials to be released, the reasons for disposal, and the plan of disposition. Due regard is given to protection of the United States against avoidable losses and to protection of producers, processors and consumers from disruption of their markets.

Stockpiled materials may also be disposed of if it is determined that they have become obsolete by reason of (1) deterioration, (2) development or discovery of new or better materials, or (3) no further usefulness in time of war. The approval of the Congress is not required to dispose of obsolete materials; however, the precautions outlined above with respect to protection against avoidable losses and market disruption are carefully observed when plans for disposing of obsolete materials are developed.

# Chart II

## STOCKPILE STATUS

## (In Billions of Dollars)




* Does not take account of materials on hand or on order under Defense Production Act contracts - currently estimated at about $1.5 billion, leaving about $ 0.5 billion to be procured from other sources.

Note: Levels of objectives and values based on market prices as of December 31, 1954

# II. ACHIEVING MATERIALS SECURITY

## STATUS OF THE STOCKPILE PROGRAM

Steady progress was made in acquiring materials for the stockpile over the six months ending December 31, 1954. During this period the Emergency Procurement Service took delivery of approximately 450 million dollars worth of materials for the stockpile. New stockpile purchases amounted to about 300 million dollars. A summary of stockpile appropriations and expenditures is shown in Appendix A.

Total new procurement for the stockpile in Fiscal Year 1955 is expected to amount to about 600 million dollars of which approximately two-thirds will be in the form of transfers from Defense Production Act inventories or reimbursements to the Commodity Credit Corporation for stockpile materials acquired by bartering agricultural commodities. This volume of total purchases reflects continuation of the trend toward more abundant supplies of many strategic materials.

The total value of the National Stockpile on December 31, 1954, was about 5 billion dollars. In addition, about 2.6 billion dollars worth of strategic materials were on order for the stockpile or were expected to be acquired under Defense Production Act contracts or through the exchange of agricultural commodities. Thus, within the next two or three years, the value of the National Stockpile is likely to increase to approximately 7.6 billion dollars.

## THE MINIMUM PROGRAM

As shown in Chart II, the total value of the 75 minimum stockpile objectives at current prices is about 6.5 billion dollars. The stockpile inventory credited to these objectives was valued at about 4.1 billion dollars on December 31, 1954, and an additional 400 million dollars of materials were under contract to the stockpile for future delivery. In addition, about 1.5 billion dollars of stockpile grade materials are expected to be acquired by the Government for minimum objectives under Defense Production Act contracts over the next few years. If these expansion program acquisitions are taken into account, the unprovided balance of the minimum program amounts to about 500 million dollars or approximately 8 percent of the total.

From the standpoint of objectives completed, the status of the minimum program on December 31, 1954, and the estimated status on June 30, 1956, are shown in the following table.

TABLE I.--Completion Status of Minimum Stockpile Objectives as of December 31, 1954, and the Estimated Status as of June 30, 1956

| Per cent In Inventory | Number of materials | |
|---|---|---|
| | December 31, 1954 | June 30, 1956 |
| 100..... | 39 | 45 |
| 90 - 99.... | 6 | 9 |
| 75 - 89.... | 3 | 8 |
| 50 - 74.... | 10 | 4 |
| 25 - 49.... | 9 | 4 |
| 0 - 24.... | 8 | 3 |

Of the 75 minimum stockpile objectives, 39 were completed by December 31, 1954, and nine others were 75 per-

cent or more complete. By June 30, 1956, it is expected that 62 minimum objectives will be 75 per cent or more complete.

For several of the 13 materials that will not be 75 per cent or more complete by June 30, 1956, the market situation indicates that the minimum objectives can be substantially acquired over the next two or three years. For the others, however, the supply will probably continue to be short for a considerably longer period. Vigorous efforts are being made to increase the supply of these few materials. Also, the total defense program for each material is being thoroughly examined from the standpoint of decreasing wartime requirements through research, substitution, and conservation.

### THE LONG-TERM PROGRAM

The estimated value of the additional quantities of the metals and minerals in the long-term program is 3.1 billion dollars, as shown in Chart II. Of this amount, 1 billion dollars is on hand or under contract to the stockpile, leaving an unprovided balance in the long-term program of approximately 2 billion dollars. A large percentage of this balance is accounted for by materials that are currently in short supply for the minimum program. As stated above, the completion of this part of the stockpile program will depend mainly upon the availability of strategic materials for barter exchange and the necessity of helping to maintain the domestic production component of the mobilization base by stockpile purchases in the open market at prices favorable to the Government.

During the six months ending December 31, 1954, about 650 million dollars worth of stockpile materials in excess of minimum objectives were credited to the long-term objectives and 154 million dollars of new purchases were made under this program. Of this amount about 90 million dollars worth of materials were purchased from Defense Production Act inventories. The balance was in the form of open-market purchases, chiefly lead, zinc, and metallurgical manganese.

### THE SUPPLEMENTAL STOCKPILE

No strategic materials have been acquired as yet for the supplemental stockpile under Title I of the Agricultural Trade Development and Assistance Act of 1954. Several programs for the sale of surplus agricultural commodities to foreign countries were under negotiation by December 31, 1954, and may result in the acquisition of some strategic materials for the supplemental stockpile.

## OTHER SIGNIFICANT ACTIVITIES

### REVIEW OF STOCKPILE OBJECTIVES

To maintain the security in materials that has been achieved and to make certain that defense materials programs are moving in the right direction, it is essential that these programs be reviewed frequently. It is the policy of the Office of Defense Mobilization to review most of the stockpile objectives at least once a year, with special reviews if significant changes occur in strategic plans and guidance, full war requirements, or the outlook for wartime supplies.

During the period July 1 to December 31, 1954, substantial progress was made toward reviewing the stockpile program. Most of the materials with substantial deficits were reviewed as well as many other items in the stockpile list. In summary, the programs for 30 stockpiled materials were completely reviewed and the review of an equal number of materials was started by the end of the calendar year.

As a result of review actions completed, 3 minimum objectives were reaffirmed, 9 were increased, and 18 were decreased. Provisional long-term objectives were established for 49 metals and minerals.

## BARTER PROCUREMENT

The quantity of strategic materials acquired for the stockpile by bartering surplus agricultural commodities increased substantially following passage of the Agricultural Trade Development and Assistance Act in July 1954. During the six months' period the Commodity Credit Corporation bartered for about 75 million dollars worth of strategic materials of which 20 million dollars were acquired for the minimum program and 55 million dollars for the long-term program. This amount is nearly as large as the total value of all materials acquired for the stockpile by barter in preceding years. The increase in barter transactions reflects increased availability of stockpile materials in foreign markets, and the impetus given to barter procurement by the new Act.

## STORAGE AND MAINTENANCE

As the size of the National Stockpile increases, storage and maintenance become increasingly important operations. On December 31, 1954, about 21,500,000 tons of strategic materials were in inventory. During the last half of the year nearly 1,000,000 tons of materials were received, inspected, and transported to permanent storage sites.

As of December 31, 1954, the materials in the National Stockpile were stored in the following types of facilities:

| | |
|---|---|
| 69 | Military depots |
| 11 | General Services Administration depots |
| 5 | Vaults |
| 21 | Commercial locations, at which stockpile oils are stored in tanks |
| 13 | Leased commercial sites, for bulk ores |
| 144 | Commercial warehouses, at which other stockpile materials are stored |
| 4 | Other Government-owned sites, for bulk ores |
| 27 | Industrial plant-site locations |
| 294 | Total |

Considerable work has been done by the Emergency Procurement Service to improve Government-owned storage facilities and in other ways to prevent the loss or deterioration of stored materials. A number of changes were made with respect to fire protection. The fifth new Government tank farm for stockpiled vegetable oils was completed, thus providing Government storage space for the entire inventory of this type of material. Five new industrial plant-site storage locations were established. During the 6 months' period, the Emergency Procurement Service completed approximately 25,000 physical inspections of stockpiled materials and made or contracted for more than 4,500 laboratory tests.

## SPECIFICATIONS

The work of reviewing all stockpile specifications was continued during the first half of the current fiscal year. A list of the materials covered and the nature of the changes made are shown in Appendix G.

With respect to the types or grades of materials being stockpiled, the trend is somewhat in the direction of the higher forms. This is due primarily to refinement of the supply-demand analyses, technical changes in essential wartime end-items, and greater consideration of possible wartime damage to domestic production in recent reviews of stockpile objectives.

## RESEARCH AND DEVELOPMENT

The Stock Piling Act authorizes and directs the Departments of the Interior and Agriculture to make scientific, technological, and economic investigations with respect to stockpile materials. Exploration and development are also authorized in the Defense Production Act of 1950. The major research activities of the Government on defense materials have been reviewed in detail in previous reports. The following discussion includes only those activities that have produced significant results during the past six months.

*DEPARTMENT OF THE INTERIOR*

The stockpile research program of the United States Geological Survey includes basic research on factors affecting the formation of ore deposits and the development of new and improved methods for discovering and measuring such deposits. The projects that were completed during the period July 1 to December 31, 1954, are shown in Appendix C.

The research and development program of the Bureau of Mines has made many notable contributions to the supply of strategic and critical materials. Important results have also been achieved by the Bureau of Mines in developing substitute materials. The reports issued by the Bureau on this type of work during the first half of the fiscal year are also shown in Appendix C.

Both the United States Geological Survey and the Bureau of Mines have accomplished much in solving defense problems for some defense materials. These contributions are briefly described in the following section of this report.

The Defense Minerals Exploration Administration continues to encourage exploration for new mineral deposits.

*DEPARTMENT OF AGRICULTURE*

The castor bean research program of the Agricultural Research Service may make important contributions to the establishment of castor beans as a commercial crop in the United States to meet growing industrial demands. Significant improvements have been made in the varieties that can be grown, in methods of production, and in harvesting machinery.

A practical process has now been developed for producing morphine from poppy straw without first producing opium. The straw includes all parts of the plant that are harvested other than the seed. Applications have been filed for a public service patent on the process.

Research has continued on canaigre, a potential domestic substitute for imported vegetable tannins. The difficulty of obtaining a satisfactory yield and purity of tannin extract from certain strains of canaigre root caused the pilot plant to be shut down while additional laboratory studies were made to develop a more satisfactory extraction. This problem has now been overcome and modification of the original extraction process has been tested in the laboratory and pilot plant operations have been resumed.

*GENERAL SERVICES ADMINISTRATION*

In order to obtain a longer storage life for cordage fibers, the Emergency Procurement Service undertook experiments on the effect of temperature and relative humidity in the gain or loss of moisture in the fiber.

For the past two years' tests have been made of refined palm oil of low fatty acid and moisture content. Preliminary results indicate that refined palm oil is fairly stable and does not increase appreciably in fatty acid content while in storage. It appears that refined palm oil has a longer storage life and thus does not have to be rotated as often as the crude oil.

Investigations have been made on the possible causes for the deterioration of various semi-perishable stockpiled materials. For example, in cooperation with the Bureau of Standards and the Department of Agriculture, methods of retarding oxidation in pyrethrum are being investigated. An agreement was entered into with the Department of Agriculture for a complete inspection of stockpiled pyrethrum to determine the extent of deterioration.

# DEVELOPMENTS IN SPECIFIC MATERIALS

## ALUMINUM

Substantial progress was made in acquiring metal against the minimum objective, largely because the continuing increase in total supplies available exceeded growth in industrial demand during the reporting period.

## ASBESTOS--AMOSITE AND CHRYSOTILE

The Bureau of Mines has developed a method for determining the magnetite content of chrysotile asbestos. Also, fibrous potassium lead silicate, produced experimentally in the Bureau's laboratories, was made into paper in order to evaluate its utility as a possible substitute for natural asbestos.

## BAUXITE--METALLURGICAL GRADE

Plans were completed for a proposed expansion program that will permit the stockpile to acquire Jamaica-type ore against the minimum objective. The minimum objective for the Surinam-type is now complete.

## CHROMITE--METALLURGICAL GRADE

The General Services Administration concluded arrangements for converting certain Government-owned low-grade chrome ores not meeting stockpile specifications into low-carbon ferrochrome.

## CASTOR OIL

Because of recently developed substitutes, and advances in domestic production of castor beans, the Office of Defense Mobilization reduced the stockpile objective to a point where the existing inventory is adequate without further acquisitions.

The Emergency Procurement Service has rotated a quantity of castor oil stored in West Coast commercial facilities for fresh oil delivered to East Coast Government tanks, with a consequent saving in shipping costs.

## COCONUT OIL

A recent review resulted in the stockpile objective being reduced to about the level of the current inventory; thus no further procurement is necessary.

The Emergency Procurement Service plans to rotate high acid coconut oil stored in commercial facilities on the West Coast and replace it with new oil delivered to Government tank farms on the East Coast. This will provide higher quality oil, save transportation costs, and bring the material closer to points of potential use.

## COLUMBITE-TANTALITE

Receipts of columbite-tantalite under the Government's offer-to-purchase program increased substantially over the past two years. The defense position in these materials has improved greatly.

The Bureau of Mines began operating a pilot plant to recover columbium and tantalum from complex ores and to separate one from the other. The Geological Survey has developed improved methods for accurate determination of columbium in rocks.

## COPPER

The low level of industrial copper inventories, an uptrend of industrial activity, and work stoppages in the United States, Rhodesia, and Chile all resulted in a world-wide shortage of copper. To

alleviate the situation, the Office of Defense Mobilization in October authorized the release of copper from Defense Production Act inventories and deferred deliveries of copper on order under Defense Production Act and stockpile contracts for the rest of 1954. This action was taken to aid fabricators who faced curtailed operations and consequent layoff of employees.

Under the program, 19,008 short tons of copper were released from Defense Production Act inventories and 22,340 short tons were diverted to industry. The total assistance thus amounted to 41,348 tons.

Studies completed during the period indicated a potential wartime shortage of beryllium-copper master alloy. The Office of Defense Mobilization, therefore, authorized the purchase of a small quantity of this material.

## CORDAGE FIBERS--ABACA AND SISAL

A plan for resuming the rotation of abaca has been placed in operation. The rotation of sisal will be resumed once the program for abaca is well established. Intensive study was given to the level of operation of the Government's Central American abaca plantations with a view to reducing the continuing annual monetary losses without adversely affecting national security.

On August 18, 1954, the President delegated to the Director of the Office of Defense Mobilization responsibility under the Abaca Production Act of 1950 for determining the number of acres to be cultivated.

The United States assisted the Philippine Republic in combating the spread of abaca mosaic disease by providing an expert to advise on the effectiveness of the Philippine control program.

## FEATHERS AND DOWN--WATERFOWL

Difficulties in attaining the stockpile objective have accentuated the importance of developing substitutes. Two promising substitutes are being developed and tested. Modified chicken feathers may be adequate for certain military uses. Army Quartermaster tests indicate that one of the synthetic fibers may be a partial substitute; however, technical problems concerning the use of this material in military equipment remain to be solved.

## GRAPHITE--LUBRICANT AND PACKING

Experimental milling tests have demonstrated that fine graphite material can be concentrated so as to meet stockpile specifications for lubricant and packing grade graphite. These tests, conducted by industry with technical assistance from the Bureau of Mines, were directed toward the recovery and utilization of the fine graphite materials that result during the production of flake graphite.

## LEAD AND ZINC

Following earlier actions, the President announced on August 20, 1954, a three-point program for lead and zinc to assist in maintaining the domestic production component of the mobilization bases for these materials. Under this new program, the President (a) authorized the purchase from domestic producers during the balance of this fiscal year of up to 200,000 tons of newly-mined lead and 300,000 tons of newly-mined zinc for the long-term stockpile objective; (b) requested action by the Secretary of State to seek recognition by the principal foreign producers of lead and zinc that this increased stockpile buying is designed to help domestic production; and (c) directed that lead and zinc of foreign origin be acquired by the Commodity Credit Corporation for the supplemental stockpile under the Agricultural Trade Development and Assistance Act of 1954.

The Bureau of Mines perfected a procedure for the electrolytic recovery of pure zinc from two kinds of galvanizing zinc wastes. In another series of experiments, substantially all iron was removed from an intermediate product of a

zinc distillation process, by means of centrifugation. The Bureau also devised a procedure for leaching and reverberatory smelting to eliminate zinc from scrap solder that has been contaminated by zinc chloride in various manufacturing operations.

## MANGANESE ORE, BATTERY GRADE

A review of the battery grade manganese ore stockpile objective indicated the need for stockpiling synthetic manganese dioxide, so purchases have been authorized. Synthetic manganese dioxide is used primarily for military dry cell batteries because of its superiority in electrical output.

## MICA, MUSCOVITE BLOCK AND FILM

In a review of the stockpile objectives for Muscovite mica, a single objective for block mica was established under a new designation--Mica, Muscovite Block, Stained and Better--which includes Radio Tube Quality, formerly listed separately.

A private plant is being built to produce synthetic mica through a process developed by the Bureau of Mines. Considerable progress has been made in bonding synthetic mica without organic agents, thereby obtaining a product that may have excellent dielectric properties and may be capable of withstanding higher temperatures than natural mica.

## NICKEL

Defense Production Act contracts have resulted in a large expansion in the supply of nickel. As a result substantially increased quantities of nickel are being acquired for the stockpile. However, this material will continue to be a stockpile problem for some time to come. Meanwhile, additional expansion projects are being examined, exploration for new deposits is being assisted, and experimental work on improved extraction processes is being done.

Work on expansion of nickel production in Cuba is moving ahead on schedule and should be completed in about a year. Production at the Nicaro plant, owned by the United States Government, is being expanded from 14,000 tons (nickel content of the oxide) to 24,500 tons per year. The Cuban laterite ores are being explored and methods of processing them to provide nickel, cobalt, chrome, and iron ore are being investigated. One leaching process will be tested by a pilot plant of 50 tons' daily capacity. Another process has recently been developed which may soon be in the pilot plant stage.

## PALM OIL

The introduction of domestically available substitutes for palm oil in steel production during the first half of calendar year 1954 has resulted in a substantially lower stockpile objective for this material. In September, 1954, the General Services Administration published in the Federal Register a plan for disposing of 11,000,000 pounds of palm oil.

## PYRETHRUM

Military requirements for pyrethrum have declined because of the availability of a synthetic substitute. The stockpile objective for this material was recently reviewed and revised downward to a level considerably below the present inventory.

## RARE EARTHS

The Emergency Procurement Service is conducting research on the storage of rare earth materials. Attention is being given to problems arising from possible instability in storage and the advantage of repackaging or converting or exchanging this material for a more stable form.

## SELENIUM

Work is under way on the possibility of developing low-grade selenium ore deposits on a commercial scale. The recent work stoppages in copper, with the resultant loss of by-product selenium

production, intensified the over-all shortage in the last half of 1954, thus adding to the interest of industry and Government in new sources of supply. A supply-requirements review of high-purity selenium is being completed to determine whether part of the stockpile should be accumulated in this form. Only the commercial grade has been specified for purchase.

## SHELLAC

The shellac stockpile objective was recently revised upward. The Emergency Procurement Service developed plans for rotating a quantity of sub-specification and deteriorated shellac.

## SILK

A review of the stockpile objective for silk revealed that mobilization requirements for silk waste and noils do not need to be met with raw silk. Accordingly, separate stockpile objectives have been established for raw silk and for silk waste and noils.

Investigations made by the Emergency Procurement Service indicate that silk may best be stored under conditions of controlled temperature and moisture. The benefits to be derived from such storage are now being weighed against the cost of providing suitable facilities.

## SPERM OIL

The Department of Agriculture has been conducting research on substitutes, in the hope of reducing the total dependence of the United States upon imports. A potential substitute for some of the critical uses of sperm oil is "jojoba" oil, derived from the seed of a wild shrub (Simmondsia) which is native to the southwestern part of the United States and adjacent Mexico. At the present time "jojoba" oil is being tested by the Department of Agriculture and several industrial concerns.

## TANTALITE (See Columbite)

## TUNGSTEN

Stimulated by the Government's offer-to-purchase program involving premium prices, domestic tungsten ore production is currently exceeding consumption by a considerable margin. Industrial demand is being supplied by lower-priced foreign material, so that most of the domestic production is being sold to the Government.

A simplified method for testing tungsten ores and concentrates has been adopted as a result of previous experience in examining material for the stockpile. In conformity with current usage and practices, minor changes have been made in the stockpile specifications for tungsten.

## VEGETABLE TANNINS--QUEBRACHO, WATTLE, AND CHESTNUT

A review of the requirements for these three materials resulted in a moderate reduction of the combined objectives. This was due primarily to the petroleum industry's increased use of substitutes for quebracho as an additive for controlling the viscosity of drilling muds, and to greater use of substitute materials for shoe leather.

## ZINC (See Lead)

## APPENDIX A

## FINANCIAL SUMMARY OF STOCKPILE OPERATIONS, AS OF DECEMBER 31, 1954

### Table 1 STATUS OF OBLIGATIONAL OPERATIONS, AS OF DECEMBER 31, 1954

| Authority | Appropriated Funds a/ | Authorizations For: Making Advance Contracts b/ | Authorizations For: Liquidating Outstanding Advance Contracts c/ | Total Obligational Authority (Cumulative) d/ |
|---|---|---|---|---|
| Under PL 117 - 76th Congress | | | | |
| PL 361 - 76th Congress, August 9, 1939 | $ 10,000,000 | | | $ 10,000,000 |
| PL 442 - 76th Congress, March 25, 1940 | 12,500,000 | | | 22,500,000 |
| PL 667 - 76th Congress, June 26, 1940 | 47,500,000 | | | 70,000,000 e/ |
| Under PL 520 - 79th Congress | | | | |
| PL 663 - 79th Congress, August 8, 1946 | $100,000,000 | $ - | $ - | $100,000,000 |
| PL 271 - 80th Congress, July 30, 1947 | 100,000,000 | 75,000,000 | - | 275,000,000 |
| PL 785 - 80th Congress, June 25, 1948 | 225,000,000 | 300,000,000 | - | 800,000,000 |
| PL 785 - 80th Congress, June 25, 1948 | 75,000,000 | - | 75,000,000 | 800,000,000 |
| PL 119 - 81st Congress, June 23, 1949 | 40,000,000 | 270,000,000 | - | 1,110,000,000 |
| PL 150 - 81st Congress, June 30, 1949 | 275,000,000 | 250,000,000 | - | 1,635,000,000 |
| PL 150 - 81st Congress, June 30, 1949 | 250,000,000 | - | 250,000,000 | 1,635,000,000 |
| PL 434 - 81st Congress, October 29, 1949 | - | - | 100,000,000 f/ | 1,535,000,000 |
| PL 759 - 81st Congress, September 6, 1950 | 365,000,000 | - | 240,000,000 | 1,660,000,000 |
| PL 759 - 81st Congress, September 6, 1950 | 240,000,000 | 125,000,000 | - | 2,025,000,000 |
| PL 843 - 81st Congress, September 27, 1950 | 573,015,637 g/ | - | - | 2,598,015,637 |
| PL 911 - 81st Congress, January 6, 1951 | 1,834,911,000 | - | - | 4,432,926,637 |
| PL 253 - 82nd Congress, November 1, 1951 | 590,216,500 | - | - | 5,023,143,137 |
| PL 253 - 82nd Congress, November 1, 1951 | 200,000,000 | - | 200,000,000 | 5,023,143,137 |
| PL 455 - 82nd Congress, July 25, 1952 | 203,979,000 | - | 70,000,000 | 5,157,122,137 |
| PL 176 - 83rd Congress, July 31, 1953 | - | - | 30,000,000 | 5,127,122,137 |
| PL 428 - 83rd Congress, June 24, 1954 | - | - | 27,600,000 | 5,099,522,137 |
| PL 663 - 83rd Congress, August 26, 1954 | 380,000,000 | - | - | 5,479,522,137 |
| Total PL 520 | 5,452,122,137 h/ | 1,020,000,000 | 992,600,000 | 5,479,522,137 |
| TOTAL PL 117 AND PL 520 | 5,522,122,137 h/ | 1,020,000,000 | 992,600,000 | 5,549,522,137 |

a/ Congressional appropriations of funds for stockpiling purposes.
b/ Congressional appropriations of contracting authority for stockpiling purposes in advance of appropriation of funds.
c/ Congressional authorizations to liquidate outstanding obligations incurred under previously granted advance contract authority.
d/ Cumulative total of appropriated funds and advance contract authorizations, less authorizations to liquidate outstanding advance contracts.
e/ Excludes $8,845,792 received from sale of stockpile materials for wartime consumption. These receipts were returned to the Treasury February 1948.
f/ Cancellation of previously authorized authority to make advance contracts.
g/ Excludes $25,621,733 transferred to operating expenses for rehabilitation of Government-owned material producing plants.
h/ Excludes receipts from rotational sales.

## Table 2 TOTAL OBLIGATIONS AND EXPENDITURES OF STOCKPILING FUNDS

## CUMULATIVE AND BY FISCAL PERIOD, THROUGH DECEMBER 31, 1954

| Fiscal Period | Obligations Incurred a/ | | Expenditures b/ | |
|---|---|---|---|---|
| | Net Change By Fiscal Period | Cumulative as of End of Period | By Fiscal Period | Cumulative as of End of Period |
| Prior to Fiscal Year 1947 | $54,983,152 | $54,983,152 | $54,970,732 | $54,970,732 |
| Fiscal Year 1947 | 68,888,533 | 123,871,685 | 11,359,999 | 66,330,731 |
| Fiscal Year 1948 | 252,901,411 | 376,773,096 | 82,907,575 | 149,238,306 |
| Fiscal Year 1949 | 459,766,881 | 836,539,977 | 304,486,177 | 453,724,483 |
| Fiscal Year 1950 | 680,427,821 | 1,516,967,798 | 440,834,970 | 894,559,453 |
| Fiscal Year 1951 | 2,075,317,099 | 3,592,284,897 | 655,537,199 | 1,550,096,652 |
| Fiscal Year 1952 | 948,117,547 | 4,540,402,444 | 844,682,459 | 2,394,780,111 |
| Fiscal Year 1953 | 252,375,163 | 4,792,777,607 | 906,158,850 | 3,300,938,961 |
| Fiscal Year 1954 | 116,586,681 | 4,909,364,288 | 644,760,321 | 3,945,699,282 |
| Fiscal Year 1955 First Half | 248,027,852 | 5,157,392,140 | 485,716,703 | 4,431,415,985 |

a/ Figures are the sum of obligations incurred under PL 520, 79th Congress and PL 117, 76th Congress. Final obligations under PL 117, 76th Congress were incurred in Fiscal Year 1949.

b/ Figures are the sum of expenditures under PL 520, 79th Congress and PL 117, 76th Congress. Final expenditures under PL 117, 76th Congress were made in Fiscal Year 1951.

## Table 3 EXPENDITURE OF STOCKPILE FUNDS, BY TYPE - CUMULATIVE AND FOR JULY - DECEMBER, 1954

| Source of Funds and Type of Expenditure | Cumulative a/ Through June 30, 1954 | Six Months Ended December 31, 1954 | Cumulative a/ Through December 31, 1954 |
|---|---|---|---|
| Expenditures | | | |
| Gross Total | $4,218,094,216 | $504,113,000 | $4,722,207,216 |
| Less: Adjustment for Receipts from Rotation Sales | 272,394,934 | 18,396,297 | 290,791,231 |
| Net Total | 3,945,699,282 | 485,716,703 | 4,431,415,985 |
| Material Acquisition Costs, Total | 3,703,651,023 | 461,883,167 | 4,165,534,190 |
| Material Purchases | 3,556,027,347 | 455,824,687 | 4,011,852,034 |
| Accessorial Costs | 147,623,676 | 6,058,480 | 153,682,156 |
| Stockpile Maintenance Costs, Total | 216,875,391 | 18,842,074 | 235,717,465 |
| Facilities Construction | 42,833,494 | 1,047,165 | 43,880,659 |
| Care, Handling and Processing of Transferred Materials | 60,971,979 | 320,706 | 61,292,685 |
| Other Storage and Handling Charges | 89,242,524 | 12,747,455 | 101,989,979 |
| Research and Experimental Work | 18,588 | 275 | 18,863 |
| Net Rotation Costs | 23,808,806 | 4,726,473 | 28,535,279 |
| Administrative Costs, Total | 25,172,868 | 1,991,462 | 27,164,330 |
| Emergency Procurement Service | 24,873,029 | 1,950,305 | 26,823,334 |
| Other | 299,839 | 41,157 | 340,996 |

a/ Cumulative figures are the total of expenditures under PL 117, 76th Congress, and PL 520, 79th Congress. Expenditures under PL 117, 76th Congress, totaled $70,000,000, of which $55,625,237 was for materials acquisition costs and $14,374,763 was for other costs. Final expenditures under PL 117 were made in FY 1951.

APPENDIX B

# LIST OF STOCKPILE MATERIALS

March 31, 1955

The materials listed below are currently included in the stockpiling program. Not all of the materials are under active procurement.

## GROUP I MATERIALS

The materials listed in this section constitute Group I and have been or may be acquired through purchase pursuant to Section 3(a) and by transfer of Government-owned surpluses pursuant to Section 6(a) of Public Law 520, 79th Congress.

1. Abrasives, Crude Aluminum Oxide
2. Aluminum
3. Antimony
4. Asbestos, Amosite
5. Asbestos, Chrysotile
6. Asbestos, Crocidolite
7. Bauxite, Metallurgical Grade
8. Bauxite, Refractory Grade
9. Beryl
10. Bismuth
11. Bristles, Hog
12. Cadmium
13. Castor Oil
14. Celestite
15. Chromite, Chemical Grade
16. Chromite, Metallurgical Grade
17. Chromite, Refractory Grade
18. Cobalt
19. Coconut Oil
20. Columbite
21. Copper
22. Cordage Fibers, Abaca
23. Cordage Fibers, Sisal
24. Corundum
25. Cotton, Extra Long Staple
26. Diamonds, Industrial
27. Feathers and Down, Waterfowl
28. Fluorspar, Acid Grade
29. Fluorspar, Metallurgical Grade
30. Graphite, Amorphous Lump
31. Graphite, Crucible Grade
32. Graphite, Lubricant and Packing Grade
33. Hyoscine
34. Iodine
35. Jewel Bearings, Instrument, (except Vee)
36. Jewel Bearings, Sapphire and Ruby Vee
37. Jewel Bearings, Watch and Timekeeping Device
38. Lead
39. Magnesium
40. Manganese Ore, Battery Grade
41. Manganese Ore, Chemical Grade
42. Manganese Ore, Metallurgical Grade
43. Mercury
44. Mica, Muscovite Block, Stained and Better
45. Mica, Muscovite Film, First and Second Qualities
46. Mica, Muscovite Splittings
47. Mica, Phlogopite Splittings
48. Molybdenum
49. Nickel
50. Opium
51. Palm Oil
52. Platinum Group Metals, Iridium
53. Platinum Group Metals, Platinum
54. Pyrethrum
55. Quartz Crystals
56. Quinidine
57. Rare Earths
58. Rubber, Crude Natural
59. Sapphire and Ruby
60. Selenium
61. Shellac
62. Silicon Carbide, Crude
63. Silk, Raw
64. Silk Waste and Noils
65. Sperm Oil
66. Talc, Steatite, Block
67. Tantalite
68. Tin
69. Titanium
70. Tungsten
71. Vanadium
72. Vegetable Tannin Extract, Chestnut
73. Vegetable Tannin Extract, Quebracho
74. Vegetable Tannin Extract, Wattle
75. Zinc

## GROUP II MATERIALS

The materials lised in this section have been acquired principally through transfer of Government-owned surpluses pursuant to Section 6(a) of Public Law 520, 79th Congress, and constitute Group II. None is under procurement.

1. Agar
2. Bauxite, Abrasive Grade
3. Cryolite, Natural
4. Diamond Dies
5. Emetine
6. Graphite, Crystalline Fines
7. Mica, Muscovite Block, Stained and Lower
8. Mica, Phlogopite Block
9. Optical Glass
10. Platinum Group Metals, Osmium
11. Platinum Group Metals, Palladium
12. Platinum Group Metals, Rhodium
13. Platinum Group Metals, Ruthenium
14. Rutile
15. Talc, Steatite, Ground
16. Wool
17. Zirconium Ore, Baddeleyite
18. Zirconium Ore, Zircon

## APPENDIX C

## PROJECT REPORTS AND MAPS PUBLISHED BY THE U. S. GEOLOGICAL SURVEY AND THE BUREAU OF MINES, DEPARTMENT OF THE INTERIOR

U. S. Geological Survey

Professional Paper 245, Geology and ore deposits of the Boulder County tungsten district, Colorado.

Bulletin 1005, Fluorspar deposits of Utah.

Bulletin 1015-A, Fluorspar deposits near Meyers Cove, Lemhi County, Idaho.

Bulletin 1015-B, Niobium (columbium) and titanium at Magnet Cove and Potash Sulphur Springs, Arkansas.

Bulletin 1019-A, A selected bibliography on quicksilver, 1811-1953.

Map GQ 41, Geology of the Globe quadrangle, Arizona (Copper).

Map GQ 51, Bedrock map of the Delaware quadrangle, Michigan (Copper).

Map MF 15, Geology and lead-zinc-barite deposits in the area east of Cuba City, Wisconsin.

Maps, Geology of the Stillwater, Montana,chromite area and the Wallace quadrangle in the Coeur D'Alene, Idaho, lead-zinc district. (Placed on open file for public inspection.)

Bureau of Mines

Report of Investigations 5087, Treatment tests of scheelite ores from California, Nevada, and Utah.

Report of Investigations 5088, Beneficiation of scheelite ore from the Sangdong mine, Korea.

Journal publication: The results of research on the properties, processes of hardening, and aging characteristics of magnesium-lithium-alumina alloys.

## APPENDIX D

## STOCKPILE RESPONSIBILITIES AND FUNCTIONS OF DEPARTMENTS AND AGENCIES

Office of Defense Mobilization

1. Staff agency to the President on defense materials.
2. Formulates policies and procedures for administration of stockpile programs.
3. Prepares estimates of wartime supply-requirements of strategic and critical materials and determines deficit.
4. Determines the kinds and quantities of materials to be stockpiled.
5. Develops stockpile procurement programs and prepares purchase directives to the Emergency Procurement Service.
6. Establishes expansion goals to increase supplies of strategic and critical materials.
7. Determines stockpile materials specifications.
8. Develops stockpile storage policies, criteria, and places.
9. In emergency, recommends to President release of stockpile materials.
10. Authorizes disposal programs of surplus or obsolescent stockpile materials in accordance with Stock Piling Act.

* * * * * * * *

General Services Administration
(Emergency Procurement Service)

1. Purchases stockpile materials or acquires them from Departments or Agencies.
2. Negotiates expansion contracts under the Defense Production Act as directed by ODM.
3. Arranges for storage, transportation, inspection, and handling of stockpile materials.
4. Rotates stockpile materials as necessary, under ODM policy directives.
5. Contracts for refining or processing of stockpile materials as directed by ODM.
6. Disposes of surplus or obsolescent stockpile materials under ODM directives.

* * * * * * * *

Department of Defense

strategic military guidance.

of wartime requirements of strategic and critical materials.

orage facilities as available.

Department of State

1. Provides other international strategic guidance.

2. Provides foreign supply and demand information.

* * * * * * * *

Department of the Interior

1. Provides analyses of problems in maintaining materials security and recommends necessary programs.

2. Provides estimates of wartime supplies for metals and minerals.

3. Develops programs for the encouragement of exploration, development, and mining of strategic and critical metals and minerals, and administers exploration programs related thereto.

* * * * * * * *

Department of Agriculture

1. Procures stockpile materials through barter.

2. Provides estimates of wartime supplies and requirements for strategic and critical agricultural materials.

3. Administers research programs of strategic and critical agricultural materials and substitutes.

* * * * * * * *

Department of the Treasury

1. Transfers to GSA certain stockpile materials seized by Customs or Narcotics Bureaus.

2. Stores opium, platinum, and other similar stockpile materials.

* * * * * * * *

Foreign Operations Administration

1. Transfers to GSA stockpile materials obtained with counterpart funds or repayment of advances.

* * * * * * * *

Department of Commerce
(Business and Defense Services Administration)

1. Supplies estimates of wartime requirements for war-supporting and essential civilian needs.

2. Provides supply data for many stockpile materials.

3. Maintains constant review of industrial technology relating to strategic and critical materials.

## APPENDIX E

## ADVISORY COMMITTEE STRUCTURE FOR THE STOCKPILE PROGRAM

Defense Mobilization Board
Secretaries and Heads of Agencies
(Advisory to Director, Office of Defense Mobilization on defense mobilization policy )
Chairman--Office of Defense Mobilization

- Department of State
- Department of Defense
- Department of the Treasury
- Department of the Interior
- Department of Commerce
- Department of Agriculture
- Department of Labor
- Foreign Operations Administration
- Board of Governors, Federal Reserve System
- Federal Civil Defense Administration

Interdepartmental Materials Advisory Committee
Assistant Secretary level
(Advisory to Assistant Director for Materials, Office of Defense Mobilization)
Chairman--Office of Defense Mobilization

- Department of State
- Department of Defense
- Department of the Interior
- Department of Agriculture
- Department of Labor
- Department of Commerce
- General Services Administration
- Foreign Operations Administration

Interdepartmental Commodity Advisory Committees
(Seven staff level committees assist the Office of Defense Mobilization in preparing detailed analysis of supply, demand, etc. Committees have been established for:

- Iron, Steel & Ferroalloys
- Light Metals
- Non-Ferrous Metals
- Non-Metallic Minerals
- Chemicals & Rubber
- Forest Products
- Fibers

Chairman--Office of Defense Mobilization

- Department of State
- Department of Defense
- Department of Commerce
- Foreign Operations Administration
- General Services Administration

As Appropriate: Department of the Interior, Department of Agriculture, Tariff Commission, and Others

Stockpile Storage Committee
(Staff specialists on storage policy)
Chairman--Office of Defense Mobilization

- Department of Defense
- Department of Agriculture
- Department of the Interior
- General Services Administration

Industry Advisory Committees
(About 500 committees--organized by the Departments of Commerce, Interior, and Agriculture to cover all major industrial or commercial activities)

## APPENDIX F

## PRINCIPAL STOCKPILE LEGISLATION

Listed below are the principal laws governing stockpile procurement.

| Title | Citation | Date Signed | Description |
|---|---|---|---|
| Strategic and Critical Materials Stock Piling Act | P.L. 520, 79th Cong., 50 U.S.C. 98 | 7/23/46 | Basic authority for the national stockpile: establishes organization and legislative authority for policies and procedures for stockpile management and operations. |
| Defense Production Act 1950 | P.L. 774, 81st Cong., Title III (50 U.S.C. App. 2061-2166) | 9/8/50 | Authorizes government contracts to expand capacity to produce essential materials and provides for contracts for exploration, development, and mining of metals and minerals. |
| Agricultural Trade Development and Assistance Act | P.L. 480, 83rd Cong., 15 U.S.C. 7146 | 7/10/54 | Authorizes the Department of Agriculture, through the Commodity Credit Corporation, to barter agricultural commodities for stockpile materials and to sell agricultural commodities for foreign currencies, which may be used to purchase materials for a supplemental stockpile. |
| Amendment to Commodity Credit Corporation Charter | P.L. 85, 81st Cong., 63 Stat. 154 | 6/7/49 | Authorizes Commodity Credit Corporation to accept strategic and critical materials produced abroad in exchange for agricultural commodities in its inventories. |

## APPENDIX G

## CHANGES IN STOCKPILE SPECIFICATIONS

July - December 1954

| No. | Material | New (N) or Revised (R) | Nature of Revision or New Specification |
|---|---|---|---|
| P-62-R1 | Aluminum | R | Grades added to cover wider range of current production in this country. Also, packaging requirements changed. |
| P-4-R1 | Asbestos, Amosite | R | Revised to limit percentages of moisture and foreign matter. |
| P-6-R1 | Beryl | R | Container markings and identifying documents changed. |
| P-94-R | Beryllium-Copper Master Alloy | R | Maximum allowable zinc content added to chemical requirements. |
| P-17a-R2 | Cordage Fibers, Abaca | R | Central American abaca standards revised. |
| P-82-R | Feathers and Down, Waterfowl | R | Filling power requirements added. Revised requirements for quality, packaging, marking, processing. Testing standards included. |
| P-11a | Ferrochromium, Low-Carbon | N | Issued to cover upgrading of holdings of low-grade chromite ore. |
| P-11b-R | Ferrochromium, High-Carbon | R | Chemical and physical requirements revised to conform to current industrial needs. |
| P-48a-R2 | Rubber, Crude Natural | R | Revised to assist in rotation and to lessen impact of stockpiling on the rubber market. |
| P-83a-R | Silk, Raw | R | Some types and grades eliminated. Sampling, testing, and classification procedures revised. |
| P-83b-R | Silk, Waste, Noils, and Peignee | R | Peignee added. Some grades eliminated. Testing procedures revised. |
| P-93 | Tungsten, Carbide Powder | N | Issued to cover upgrading of holdings to serve end uses. |
| P-57-R3 | Tungsten Ores and Concentrates | R | Simplified methods of testing. Also chemical requirements changed. |